

## **MININIG DEPENDENCIES FOR TESTING AND RISK MANAGEMENT**

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### **ABSTRACT OF THE DISCLOSURE**

Programs are rarely self-contained in software environments. They depend on other programs or shared subsystems like language run time and operating system libraries for various functionalities. A change in one of the external subsystems may affect the program and one or more other external subsystems.

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A method or system collects and propagates information about dependency between logical abstractions within a binary file (e.g., basic block, procedure, etc.), dependency between binary files, and dependency between subsystems (e.g., programs, component libraries, system services, etc.) In one example, such dependency information is exposed to a tool (e.g., test tool, software development tool, etc.) via an application programming interface. A tool mines this information to manage testing, determine risks of change, or manage software development. The tool may also be integrated into the method or system.

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